

On a two-weighted inequality for certain sublinear operator in weighted Musielak-Orlicz spaces

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Let B represents sublinear operator satisfying that for any $f \in L_1(R^n)$ with compact support and $x \notin \text{supp } f$

$$|\tilde{B}f(x)| \leq C \int_{R^n} \frac{|f(y)|}{|x-y|^{n-s}} dy, \quad 0 < s < n, \quad (1)$$

where $C > 0$ is independent of f and x . Note that the condition (1) was introduced in [3] and was developed in [2].

In this paper we prove a sufficient conditions on general weights ensuring the validity of the two-weight strong type inequalities for sublinear operator satisfy condition (1) acting boundedly in weighted Musielak-Orlicz spaces. In the proof of obtained result used the boundedness of for multidimensional Hardy type operator acting from usual weighted Lebesgue spaces to weighted Musielak- Orlicz spaces.(see [1])

- [1] R. A. Bandaliev.: Criteria of two-weighted inequalities for multidimensional Hardy type operator in weighted Musielak-Orlicz spaces and some application, *Math. Stat.*, 1(1998), 144–156.
- [2] Y. Ding, D. Yang and Z. Zhou.: Boundedness of sublinear operators and commutators on $L^{p,\omega}(R^n)$, *Yokohama Math. J.*, 46(1998), 15–27.
- [3] F. Soria and G. Weiss.: A remark on singular integrals and power weights, *Indiana Univ. Math. J.*, 43(1994), 187–204.